

What is claimed is:

1. An automated telephone line test apparatus, comprising:

5 test circuit means for applying test signals to a telephone line to be tested, and for detecting electrical characteristics of said telephone line to be tested;

a processor connected to said test circuit means for controlling said test circuit means;

10 display means connected to said processor; and a program memory connected to said processor;

said processor being programmed:

15 to control said test circuit means such that said test circuit means performs a pre-programmed sequence of tests with respect to said telephone line to be tested, said pre-programmed sequence of tests being performed in accordance with a program stored in said program memory; and

20 to control said display means such that said display means provides a sequence of indications each corresponding to a respective test of the pre-programmed sequence of tests, each said indication being displayed while the corresponding test is being performed.

25 2. An apparatus according to claim 1, wherein each of said indications includes an alphanumeric character string for indicating to a user of the apparatus the test corresponding to the respective indication.

30 3. An apparatus according to claim 1, wherein said processor is programmed such that said display means displays numeric readings indicative of results of said tests.

35 4. An apparatus according to claim 3, wherein said display means displays a first field in which alphabetic

information identifying said tests is listed and at least one second field in which said numeric readings are indicated.

5 5. An apparatus according to claim 4, in which at least five of said tests are simultaneously identified in said first field.

6. An apparatus according to claim 5, in which nine of said tests are simultaneously identified in said first field.

10 7. An automated telephone line test apparatus, comprising:

test circuit means for applying test signals to a telephone line to be tested, and for detecting electrical characteristics of said telephone line to be tested, said
15 test circuit means having capabilities for performing a plurality of tests that are different from each other;

a processor connected to said test circuit means for controlling said test circuit means, and for receiving test results from said test circuit means;

20 a program memory connected to said processor; and
a program stored in said program memory, said program for controlling said processor to cause said test circuit means to perform a first one of said plurality of tests; and

25 said program causing said processor to select a second test from said plurality of tests on the basis of a result of said first one of said plurality of tests, said test circuit means performing said selected second test after said first test.

30 8. An apparatus according to claim 7, wherein said first test is a loop current test, and said second test is a two-wire circuit loss test.

9. An apparatus according to claim 7, wherein said first test is a loop current test, and said second test is
35 an ohms test.

10. An apparatus according to claim 7, wherein said first test is an ohms test, and said second test is a capacitive kick test.

11. An automated telephone line test apparatus,
5 comprising:

test circuit means for applying test signals to a telephone line to be tested, and for detecting electrical characteristics of said telephone line to be tested;

a processor connected to said test circuit means
10 for controlling said test circuit means;

display means connected to said processor; and
a program memory connected to said processor;
said processor being programmed:

to control said test circuit means so
15 that said test circuit means performs a test with respect to said telephone line to be tested;

to receive data from said test circuit means indicative of a result of said test;
20 and

according to said result of said test, to control said display means to display a message instructing a user of the apparatus to perform a second test with respect to a
25 cable which includes said telephone line to be tested.

12. An apparatus according to claim 11, wherein said message instructs the user to perform a test with respect to a wire pair other than a wire pair corresponding to said
30 telephone line to be tested.

13. An automated telephone line test apparatus, comprising:

test circuit means for applying test signals to a telephone line to be tested, and for detecting electrical
35 characteristics of said telephone line to be tested;

a processor connected to said test circuit means
for controlling said test circuit means;

display means connected to said processor; and
a program memory connected to said processor;
said processor being programmed:

to control said test circuit means so
that said test circuit means performs a test
with respect to said telephone line to be
tested;

to receive data from said test circuit
means indicative of a result of said test;
and

according to said result of said test,
to control said display means to display a
string of alphabetic characters which
informs a user of the apparatus of said
result of said test.

14. An apparatus according to claim 13, wherein said
display means displays a verbal message indicating to the
user that the test result is within a range of acceptable
values.

15. An apparatus according to claim 13, wherein said
display means displays a verbal message indicating to the
user that the test result is not within a range of
acceptable values.

16. An automated telephone line test apparatus,
comprising:

test circuit means for applying test signals to
a telephone line to be tested, and for detecting electrical
characteristics of said telephone line to be tested, said
test circuit means including a plurality of test leads for
being selectively connected to said telephone line to be
tested;

a processor connected to said test circuit means
for controlling said test circuit means;

display means connected to said processor; and
a program memory connected to said processor;
said processor being programmed to control said
display means to display a message instructing a user of
5 the apparatus to change a configuration of a connection
between said test leads and said telephone line to be
tested.

17. An apparatus according to claim 16, wherein said
test leads include a first lead for being connected to a
10 tip wire of a wire pair to be tested, a second lead for
being connected to a ring wire of the wire pair to be
tested, and a third lead for being connected to a ground
structure of a cable containing the wire pair.

18. An automated telephone line test apparatus
15 according to claim 17, wherein said message instructs the
user to connect said second lead to the ring wire of the
wire pair at a time when the first lead is connected to
said ground structure.

19. A method of testing a telephone line utilizing a
20 portable test device, said test device including a test
module connected to said telephone line, a microprocessor
for controlling the test module, and a memory storing a
program for controlling the microprocessor, the method
comprising the steps of:

25 operating the test module to carry out a sequence
of tests with respect to said telephone line in response to
said stored program, said sequence of tests automatically
branching on the basis of respective results of said tests;

displaying a message instructing a user of the
30 testing device to perform a test with respect to a cable
which contains said telephone line to which said test
module is connected; and

performing said test with respect to the cable.

20. A method according to claim 19, further
35 comprising the step, carried out prior to said performing

step, of connecting said test module to a wire pair contained in said cable, said wire pair being different from a wire pair corresponding to said telephone line.

21. An automated telephone test apparatus,
5 comprising:

test circuit means for applying test signals to a telephone line to be tested, said test circuit means including means for applying dialing signals to said telephone line;

10 a memory; and

programmable means connected to said test circuit means and said memory for controlling the apparatus; said apparatus being programmed to:

15 store in said memory assignment data indicative of a telephone number corresponding to the telephone line to be tested;

apply dialing signals to said telephone line to actuate a line identification facility at a central office;

20 receive from said line identification facility at said central office line number data signals indicative of a telephone number corresponding to said telephone line to which said dialing signals were applied;

25 decode said received line number data signals;

retrieve said stored assignment data from said memory; and

30 compare said telephone number indicated by said retrieved assignment data with said telephone number indicated by said received and decoded line number data signal.

22. An apparatus according to claim 21, wherein said line number data signals are DTMF signals.

23. An apparatus according to claim 21, wherein the apparatus is further programmed to perform a sequence of tests with respect to said telephone line prior to said actuation of said line identification facility.

5 24. A method of verifying a telephone line test assignment, comprising the steps of:

storing in a memory assignment data indicative of a telephone number corresponding to a telephone line to be tested;

10 applying dialing signals to said telephone line to actuate a line identification facility at a central office;

receiving from said line identification facility at said central office line number data signals indicative of a telephone number corresponding to said telephone line to which said dialing signals were applied;

15 decoding said received line number data signals; retrieving said stored assignment data from said memory; and

20 comparing said telephone number indicated by said retrieved assignment data with said telephone number indicated by said received and decoded line number data signals.

25 25. A method according to claim 24, wherein said line number data signals are DTMF signals.

26. A method according to claim 24, further comprising the step of performing a sequence of tests with respect to said telephone line prior to said applying step.

27. A method of identifying a telephone line,

30 comprising the steps of:

receiving at a central office dialing signals transmitted via a telephone line connected to the central office;

in response to receiving said dialing signals,

35 generating at said central office DTMF signals indicative

of a telephone number which corresponds to said telephone line on which said dialing signals were transmitted; and transmitting on said telephone line said DTMF signals generated at said central office.